calibration circuit 105 through the time signal comparing circuit 106 in the sensor cell 11. The time signal comparing circuit 106 corresponds to the comparing circuit 102 in Fig. 10 and obtains the time difference between the output signal 2B from the sensor circuit 11b' with the voltage/time conversion function and a reference pulse signal having a reference time t_R from the calibration reference signal generating circuit.

REMARKS

Entry of the foregoing amendments prior to the initial examination of the above-captioned application is requested.

Respectfully submitted,

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Dated: 2/5/02

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231 on

2/6/02

Lynda Shapiro Date

Attachment: VERSION WITH MARKINGS TO SHOW CHANGES MADE

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

At the third paragraph at page 24, continuing to page 25, line 1, the following has been changed:

This arrangement will be described in more detail below. Fig. 11 shows the arrangement of part of the image capturing section 1 formed by the sensor cells 11 each having the calibration circuit 105. Each sensor cell 11 has the same arrangement and is comprised of the detection element 11a, sensor circuit 11b, and calibration circuit (sensitivity adjusting circuit) 105. The detection sensitivity of each sensor cell 11 is adjusted by using the calibration circuit 105. Each sensor cell includes the calibration circuit 105, a signal processing circuit [5] 110, and a control line L_c.

The second paragraph at page 25, has been deleted and the following changes have been made:

When the output level of each sensor cell 11 is to be corrected, i.e., calibration is to be performed, a reference sample without any uneven pattern is detected as a measurement target by the sensor cell 11 or detection is performed without any object placed on the sensor cell, thereby making each sensor cell 11 detect the same measurement value. The signal output from the sensor cell 11 is input to an A/D conversion circuit [4] 14 through a data line L_D and output as a digital output signal 4A.

The third paragraph at page 25 has been deleted and the following changes have been made:

The digital output signal 4A output from the A/D conversion circuit [4] 14 is input to the signal processing circuit [5] 110. The signal processing circuit [5]110 compares the digital output signal 4A output form the A/D conversion circuit [4] 14 with the digital output signal which should be output (to be referred to as an expected value hereinafter) to calculate an adjustment parameter for adjusting the detection sensitivity of the sensor circuit 11b. The calibration circuit 105 is then controlled through the control line L_c on the basis of the calculated adjustment parameter.

The first paragraph at page 26, has been deleted and the following changes have been made:

The data line L_D and control line L_c are common to the respective sensor cells 11. The sensor cells 11 are sequentially selected, and output signals 2A from the sensor cells 11 are sequentially input to the A/D conversion circuit [4] 14. As a consequence, the signal processing circuit [5] 110 controls the calibration circuit 105 in the sensor cell 11.

The third paragraph at page 26, has been deleted and the following changes have been made:

In this case, the signal processing circuit [5] 110 includes the comparing circuit 104 and calibration reference signal generating circuit 103 described with reference to Fig. 10 as other signal processing circuits 110. In the case shown in Fig. 11, the input signal is a digital signal. When a digital signal is input to the comparing circuit 104 without any

conversion, a known digital comparing circuit can be used as the comparing circuit 104. If the comparing circuit 104 is a general analog comparing circuit, an input signal is D/A-converted first and then supplied to the comparing circuit 104. The same applies to the calibration reference signal generating circuit 103.

At page 27, first paragraph, continuing to page 28, lines 1-10, the following changes have been made:

The sensor circuit 11b' with the voltage/time conversion function converts a signal having analog information as a voltage value into a signal having analog information in the time axis direction, and outputs the resultant signal as an output signal 2B like that shown in Fig. 14 (see Fig. 14: t_s is output time and changes). The output signal 2B is input to the A/D conversion circuit [4] 14 through the data line L_D and output as a digital output signal. At the same time, the output signal 2B is supplied to the calibration circuit 105 through the time signal comparing circuit 106 in the sensor cell 11. The time signal comparing circuit 106 corresponds to the comparing circuit 102 in Fig. 10 and obtains the time difference between the output signal 2B from the sensor circuit 11b' with the voltage/time conversion function and a reference pulse signal having a reference time t_R from the calibration reference signal generating circuit.